

## REMARKS

### A. New Matter Objections:

Applicant's formal drawings are objected to for adding new matter. Applicant addresses the objections in related groupings.

#### 1. Solid Line Removed in New Figure 1A

Removing the solid line does not add new matter. Original Figures 1, 1A, 2, and 3 are views of the same pile. Specification, ¶¶ 7-10. The removed line was inadvertently included in original Figure 1. It does not represent any element of the pile segment and does not appear on any other original drawings. For example, original Figures 1A, 2, and 3 do not show the line or any feature corresponding to the line. Further, the line is not reference with a number or discussed in the specification. From this, one skilled in the art would understand that the line was inadvertent and does not represent any element of the disclosed pile segment.

#### 2. Offset Surface 109(b) Added to New Figures 1A and 2

Adding the offset surface to new Figure 1A does not add new matter. It is clear from original Figure 1A that the off-set surface runs the length of the pile segment and would be visible as it wraps around the pile body. From original Figure 1A, one skilled in the art would know that the off-set surface should have been visible in original Figure 1.

Adding the offset surface to new Figure 2 does not add new matter. Original Figure 2 shows a view of the bottom of the pile segment shown in original Figures 1 and 1A. Looking at the bottom of the pile, one skilled in the art would readily understand from original Figures 1 and 1A that the offset surface should be visible in Figure 2. Indeed, the patent is directed to piles with offset surfaces that provide additional load bearing surfaces. Specification, ¶ 0021. For the offset surfaces to provide additional load bearing surfaces, they necessarily extend beyond the bottom surface and would be visible in the bottom view. *Id.* (discussing additional load bearing surface provided by offset area).

Replacing "109" with "109a" does not add new matter. Reference number 109 is for the ridge, which includes off-set face 109b. The width of the off-set face 109b is shown as 109a. Adding "109a" merely indicates the width of the off-set face 109b, which is visible in original and new Figures 2 and 3.

**3. Reference Numerals 105 and 107 have been interchanged in New Figures 1A, 1B, 2, and 3.**

Correcting reference numerals 105 and 107 does not add new matter. The specification discloses a pile in which the off-set surface defines the top and bottom of the pile sections. The off-set surfaces face the bottom of the pile segment. As noted, the offset surfaces serve at least two purposes, 1) they provide additional load bearing capability, and 2) they rotate the pile as it is driven into the earth. ¶ 21 (“The spiral ridge 109 provides an additional load bearing surface in the form of the offset surfaces 109b”); ¶ 18 (noting the spiral ridge causes the pile to rotate as the pile is driven into the earth). To perform these functions, the offset surfaces must face downward as the pile is driven. Indeed, the specification provides as much. Specification, ¶ 16 (“The pile 101 is preferably oriented, during installation, such that both offset surfaces 109b faces generally downward (rather than generally upward)...”). From the purpose of the off-sets and a review of original Figure 1A, one skilled in the art would understand that the figures show a pile oriented with the pile bottom 107 toward the top of the page. As such, the changes correct what was clear from the original figures and the specification.

**4. Solid line removed from original Figure 1A.**

Removing the solid line in original Figure 1A does not add new matter. The specification makes clear that the center of the pile includes an elongated bore hole 111. Specification, ¶ 14. The bore hole is also clear from original Figure 1 (showing bore hole with hidden lines) and original Figures 2 and 3 (showing bore hole from top and bottom view). From the specification and original drawings, one skilled in the art would understand that bore hole 111 is not solid and that the line through the bore hole was inadvertent.

**5. Adding reference number 103 to new Figure 2**

Adding reference number 103 to new Figure 2 does not add new matter. Reference number 103 corresponds to the concrete body referenced in original Figures 1 and 1A. As noted in the specification, Figures 1, 1A, 2 and 3 are views of the same pile. Specification, ¶¶ 7-10. As such, adding the reference to new Figure 2 merely adds consistency to the figures.

**6. Figure 5.**

Figure 5 is objected to for adding new matter. Applicant has deleted Figure 5.

**B. Claim Objections:**

Claim 5 is objected to due to an informality. Applicant has amended the claim as recommended and replaced “tapers” with “taper.”

**C. Claim Rejections – 35 USC § 112**

Claims 1-7, 9, 18, 20, and 21 stand rejected for being indefinite. Applicant has amended Claims 1-7, 9, 18, 20, and 21 to address the rejections.

**D. Claim Rejections – 35 USC § 102**

Claims 1, 2, 6, and 9 stand rejected in light of U.S. Patent Application Publication No. 2002/0168232 (“Xu”). Applicant respectfully traverses the rejection.

Xu is directed to reducing vortex induced vibrations (“VIV”) caused by ocean currents on columns extending through the water. VIV are reduced by notches on the outer surface of the column. Xu, ¶ 0042. The notches are positioned to optimally shed vortices along the length of the column. For example, adjacent notches are off-set so that vortex shedding vibrations on one point are out of phase with vortex shedding vibrations on an adjacent point. Xu, ¶ 0042.

The notches are not designed to support any portion of the compressive load on the column. The notches are designed only to effect current moving generally laterally to the column. The non-load bearing character of the notches is evident in that the vortex shedding shapes can be made from polymeric foam. Xu, ¶ 47. Further, the notches of Xu actually reduce the compressive load bearing surface. Xu, Abstract (“A reduced wall thickness is formed into the outer surface”); Figure 14 (showing reduced wall thickness caused by the groove). Because the notches are not load bearing they do not add additional load bearing capability to the pile.

Applicant’s invention, on the other hand, discloses the advantages of load bearing ridges 109. The ridges of applicant’s invention are configured to present additional surface area 109b for supporting the load on the pile. Specification, ¶ 0021. Applicant’s claims recite the additional surface in that the claimed piles include offset surfaces that provide additional load bearing capacity. As such, applicant respectfully asserts that Xu, which teaches reducing cross-sectional area to reduce VIV, does not disclose the advantages claimed by applicant.

**E. Claim Rejections – 35 USC § 103**

Claims 3, 7, and 8 stand rejected in light of 35 U.S.C. § 103 in view of Xu. Applicant respectfully transverses. For the reasons noted above, applicant respectfully asserts that Xu also does not suggest the advantages of offset surfaces with load bearing capacity.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 06-2375, under Order No. HO-P02803US0 from which the undersigned is authorized to draw.

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Respectfully submitted,

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**AMENDMENTS TO THE DRAWINGS**

FIG 5 has been deleted.